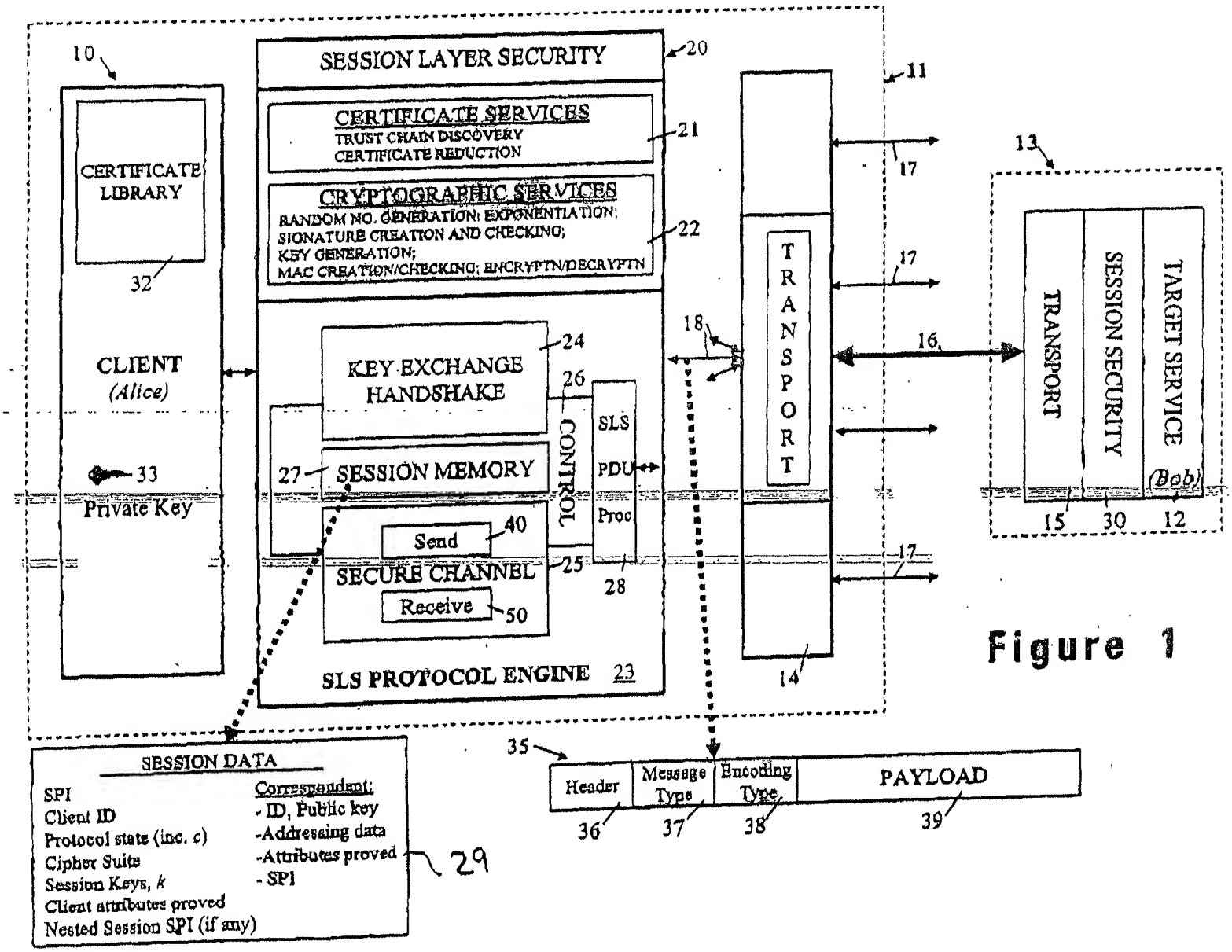

Figure 1

1/1

EL896634805US

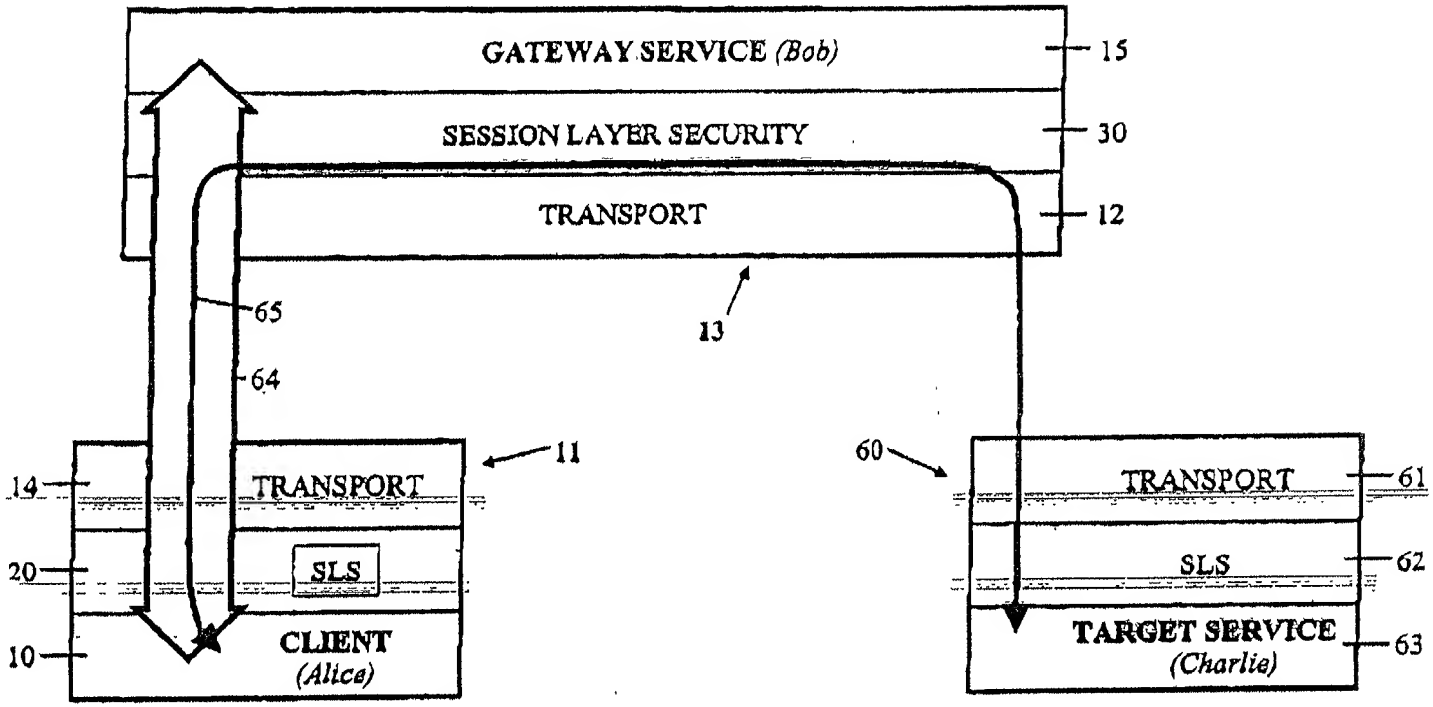
GATEWAY SERVICE (Bob)
15
SESSION LAYER SECURITY
30
TRANSPORT
12
13
65
64
11
14
TRANSPORT
20
SLS
10
CLIENT
(Alice)
60
TRANSPORT
61
SLS
62
TARGET SERVICE
(Charlie)
63

Figure 2

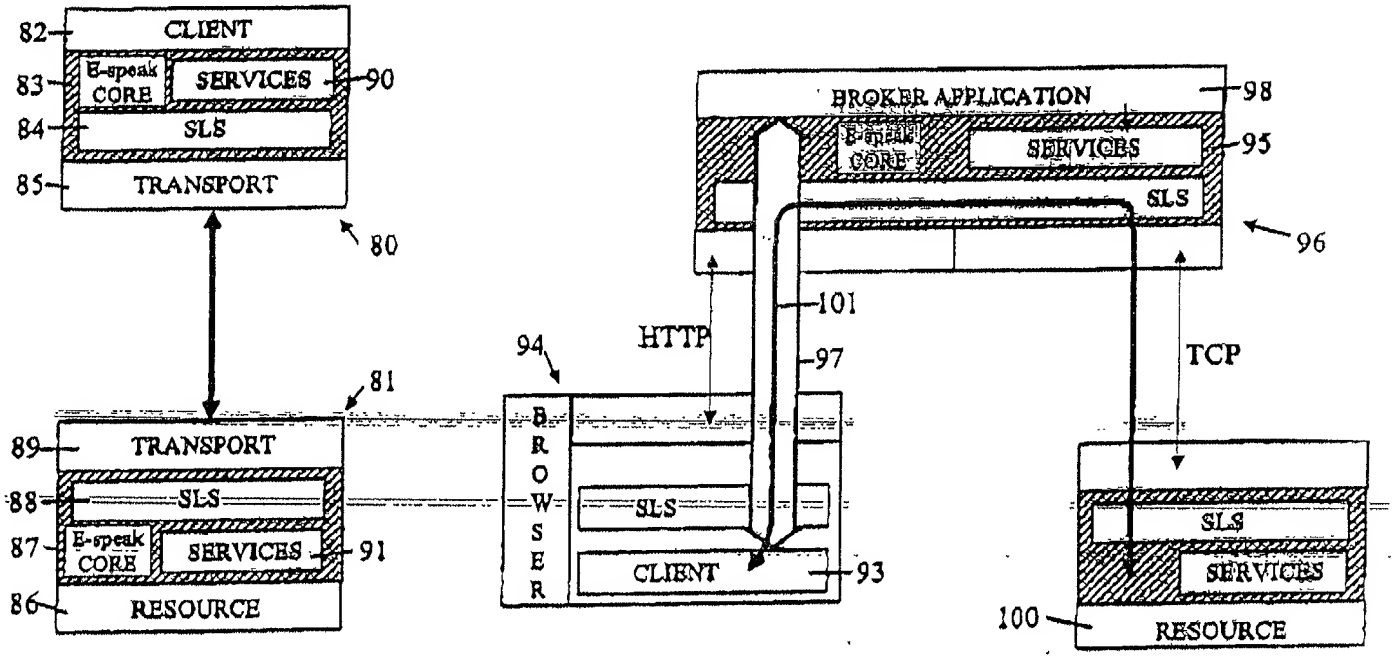

Figure 3

Figure 4

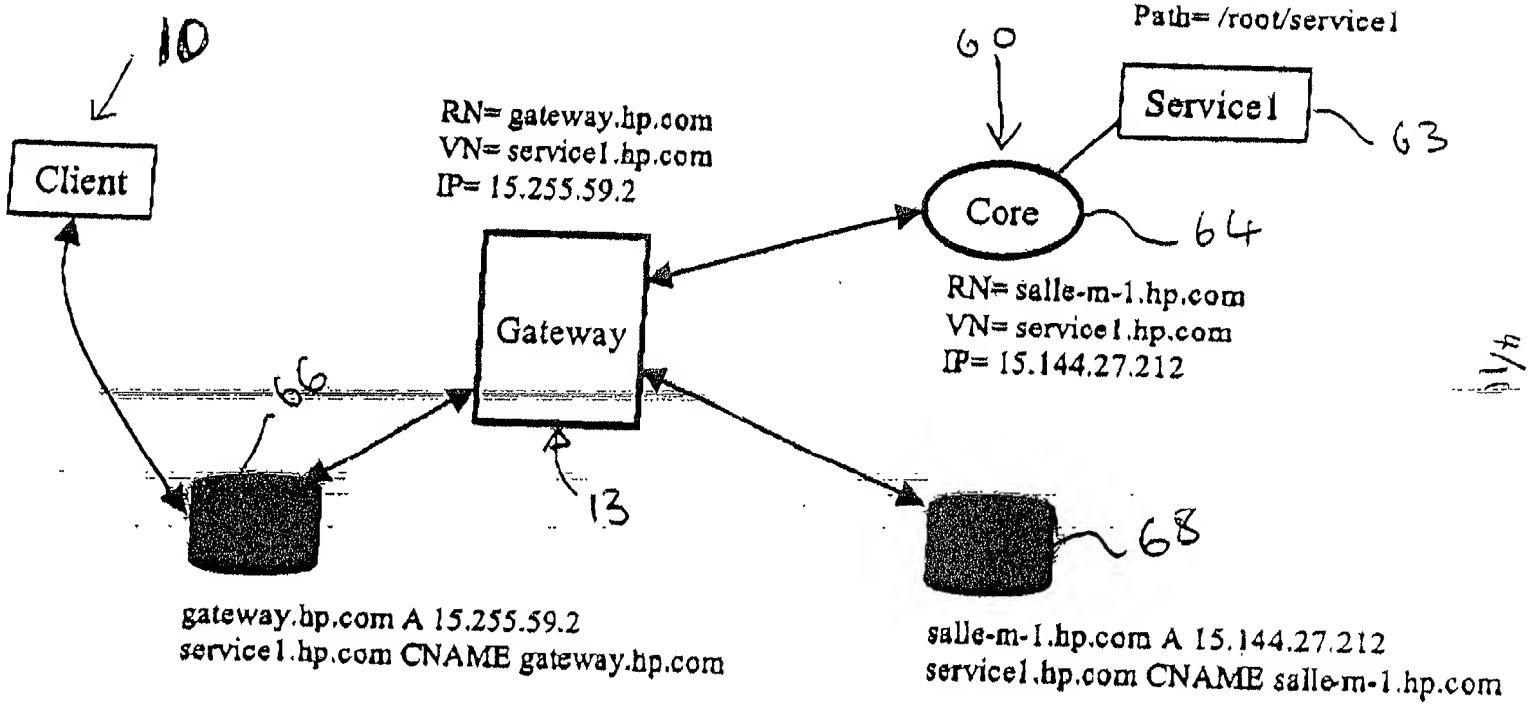
10
Client
RN= gateway.hp.com
VN= service1.hp.com
IP= 15.255.59.2
Gateway
66
13
60
Path= /root/service1
Service1
63
Core
64
RN= salle-m-1.hp.com
VN= service1.hp.com
IP= 15.144.27.212
68
gateway.hp.com A 15.255.59.2
service1.hp.com CNAME gateway.hp.com
salle-m-1.hp.com A 15.144.27.212
service1.hp.com CNAME salle-m-1.hp.com

Figure 5

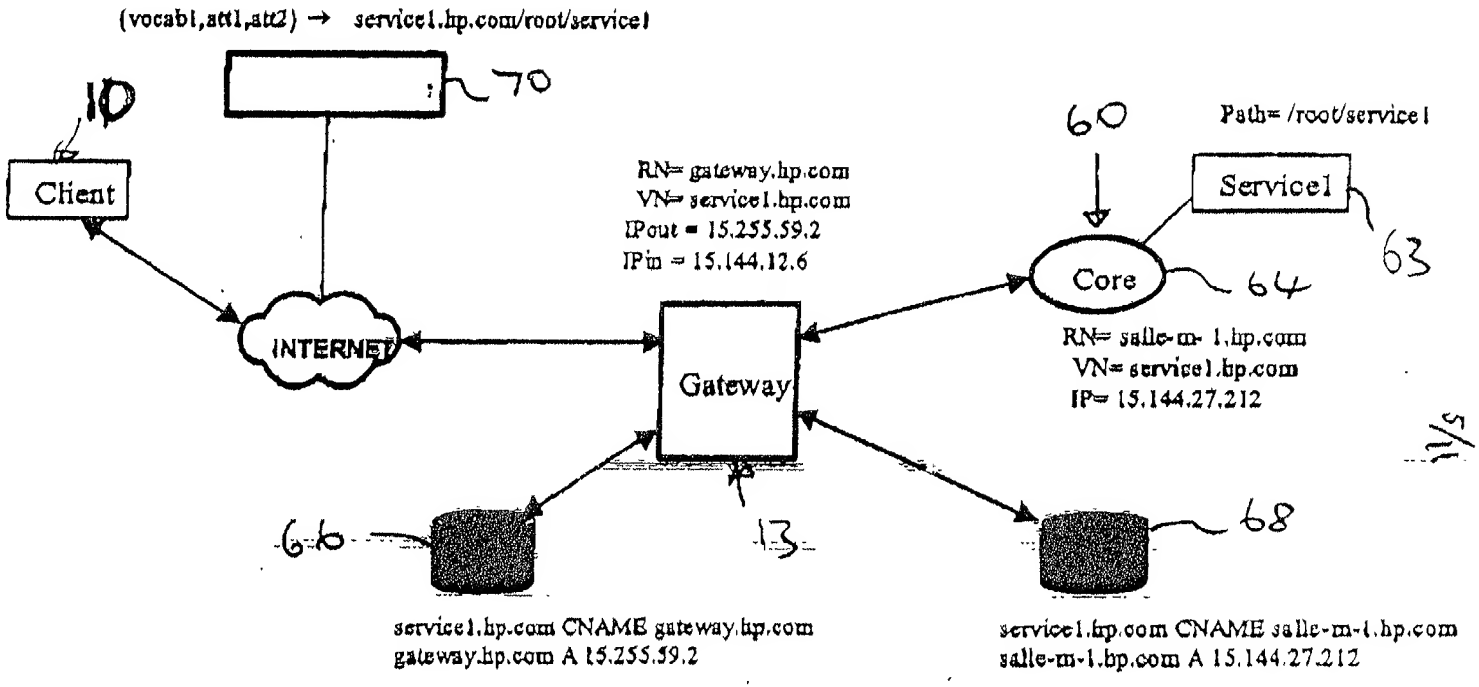
(vocab1,att1,att2) → service1.hp.com/root/service1
70
ID
Client
INTERNET
RN= gateway.hp.com
VN= service1.hp.com
IPout = 15.255.59.2
IPin = 15.144.12.6
Gateway
60
Path= /root/service1
Service1
63
Core
64
RN= salle-m- 1.hp.com
VN= service1.hp.com
IP= 15.144.27.212
66
13
68
service1.hp.com CNAME gateway.hp.com
gateway.hp.com A 15.255.59.2
service1.hp.com CNAME salle-m-1.hp.com
salle-m-1.hp.com A 15.144.27.212

Figure 6

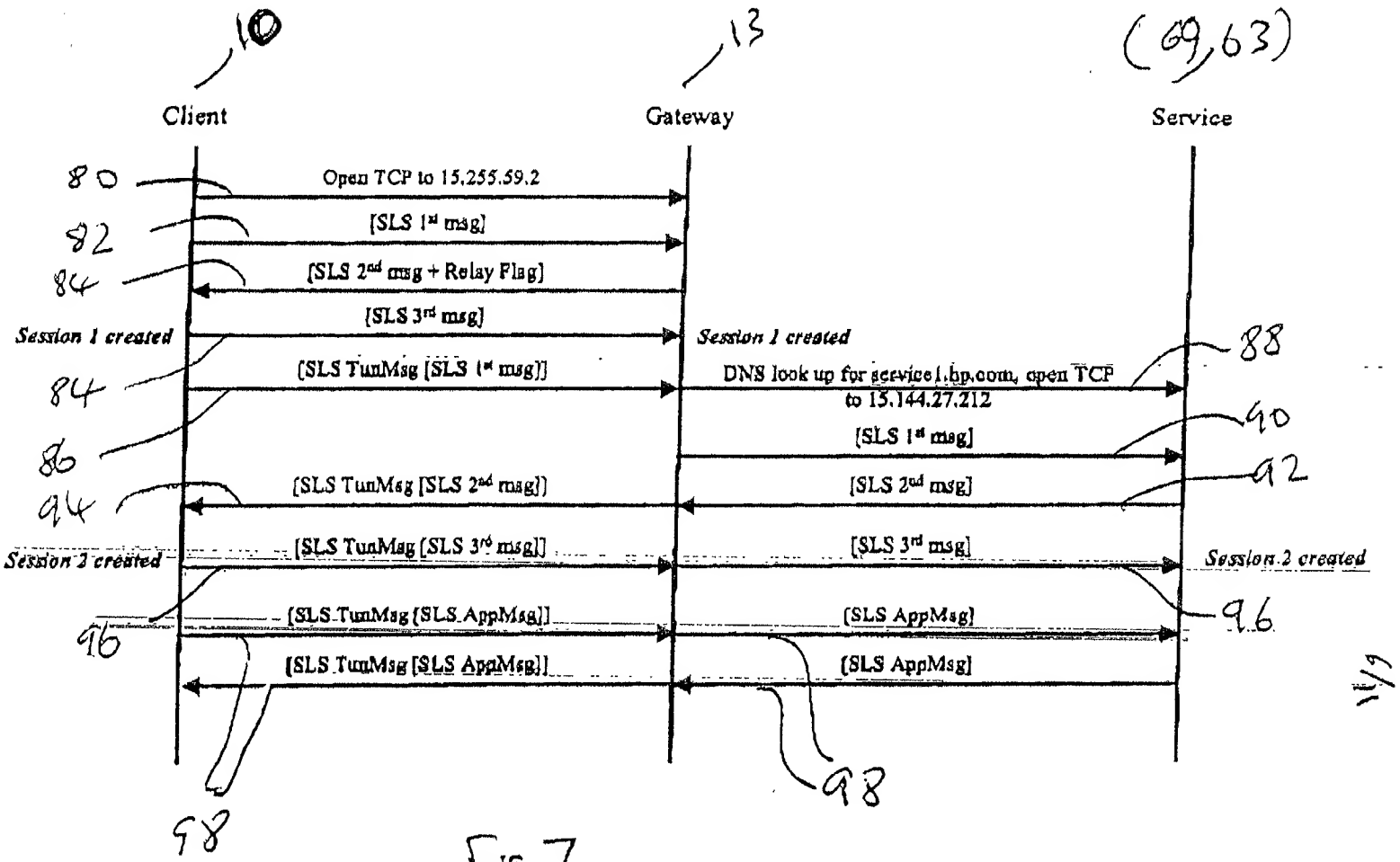
10
13
(69,63)
Client
Gateway
Service
80
Open TCP to 15.255.59.2
82
[SLS 1st msg]
84
[SLS 2nd msg + Relay Flag]
[SLS 3rd msg]
Session 1 created
Session 1 created
84
[SLS TunMsg [SLS 1st msg]]
88
DNS look up for service1.hp.com, open TCP to 15.144.27.212
86
[SLS 1st msg]
90
94
[SLS TunMsg [SLS 2nd msg]]
[SLS 2nd msg]
92
Session 2 created
[SLS TunMsg [SLS 3rd msg]]
[SLS 3rd msg]
Session 2 created
96
[SLS TunMsg [SLS AppMsg]]
[SLS AppMsg]
96
[SLS TunMsg [SLS AppMsg]]
[SLS AppMsg]
98
98

Fig 7

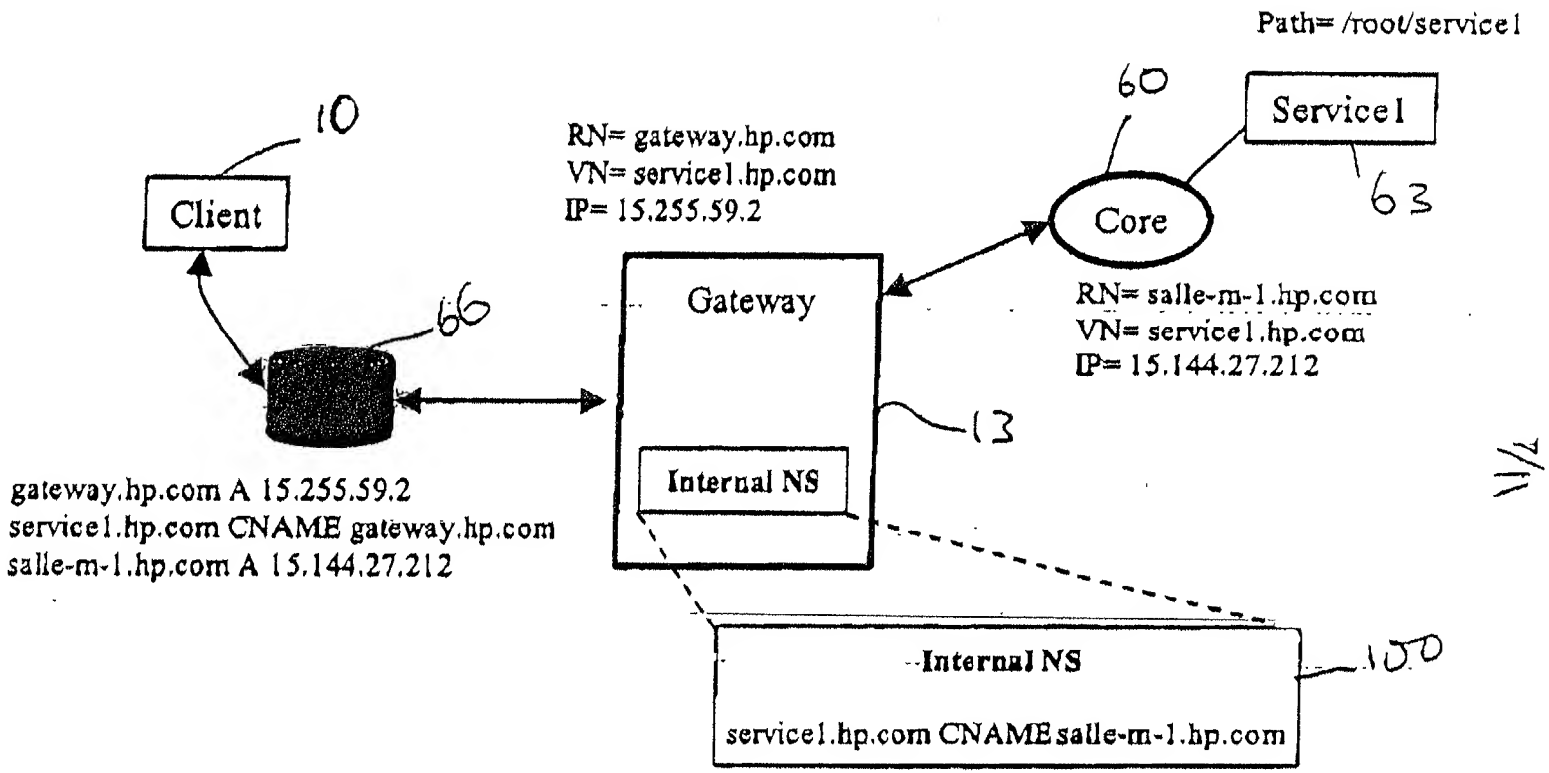
Path= /root/service1
10
Client
RN= gateway.hp.com
VN= service1.hp.com
IP= 15.255.59.2
60
Service1
63
Core
RN= salle-m-1.hp.com
VN= service1.hp.com
IP= 15.144.27.212
66
Gateway
13
Internal NS
gateway.hp.com A 15.255.59.2
service1.hp.com CNAME gateway.hp.com
salle-m-1.hp.com A 15.144.27.212
Internal NS
service1.hp.com CNAME salle-m-1.hp.com
150

Fig 8

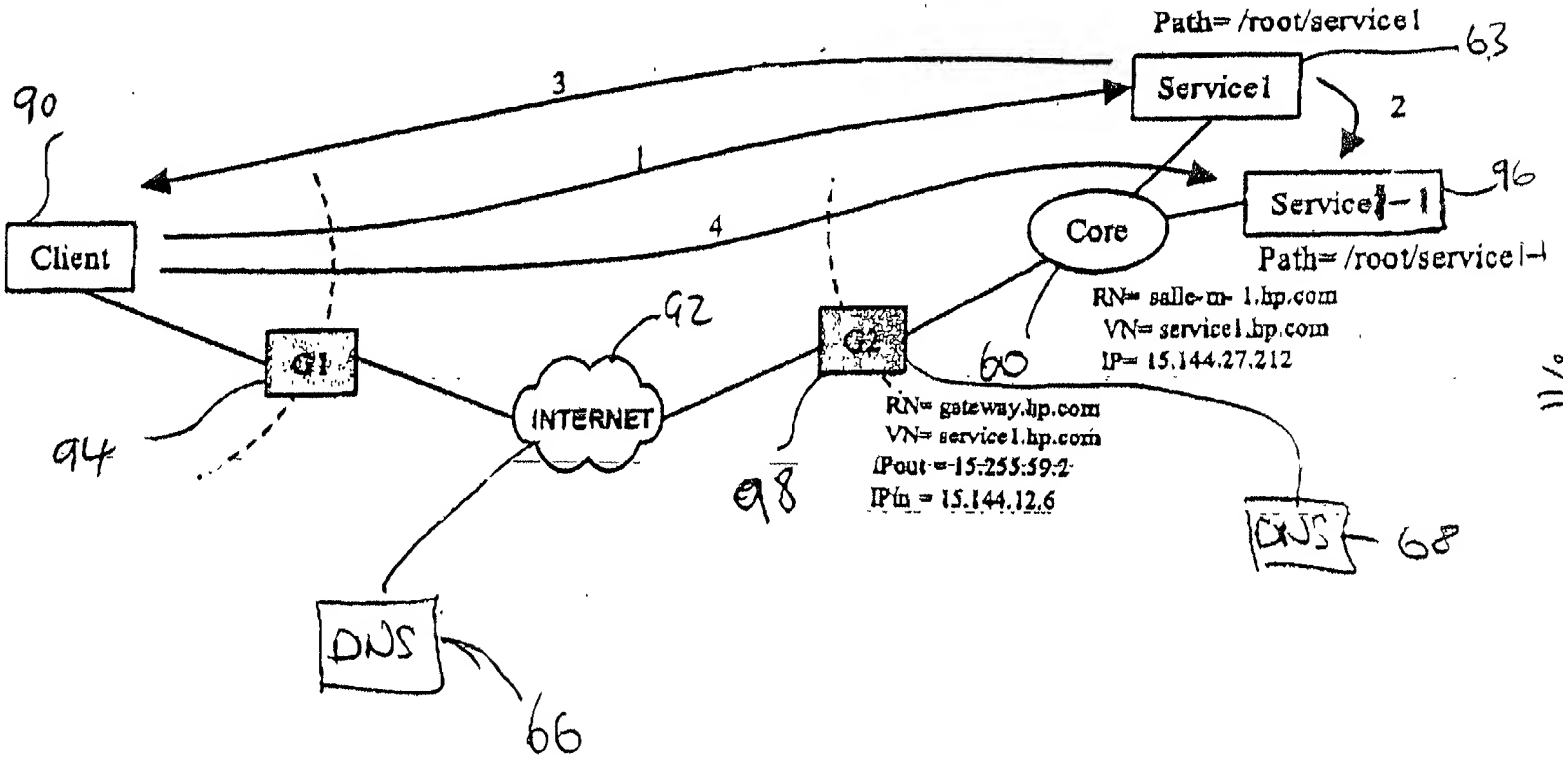
Path= /root/service1
63
Service1
3
2
90
1
4
Client
Core
Service1-1
96
Path= /root/service1-1
RN= salle-m-1.hp.com
VN= service1.hp.com
IP= 15.144.27.212
92
G1
G2
60
INTERNET
94
RN= gateway.hp.com
VN= service1.hp.com
IPout = 15.255.59.2
98
IPin = 15.144.12.6
CNS
68
DNS
66

Fig 9

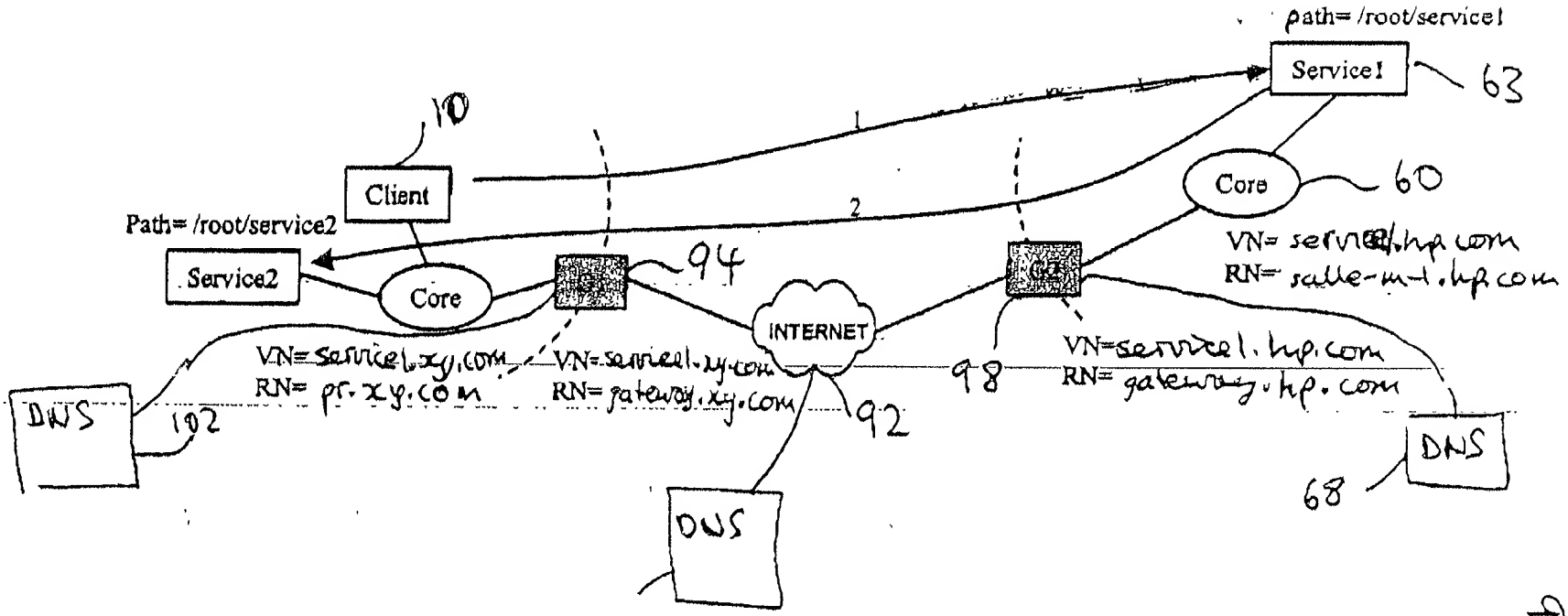
path= /root/service1
Service1
63
10
Client
1
2
Core
60
Path= /root/service2
Service2
Core
94
INTERNET
VN= service1.hp.com
RN= salle-m-1.hp.com
VN=service1.xy.com
RN= pr.xy.com
VN=service1.xy.com
RN=gateway.xy.com
98
VN=service1.hp.com
RN= gateway.hp.com
DNS
102
92
DNS
68
DNS
66

Fig 10

11/b

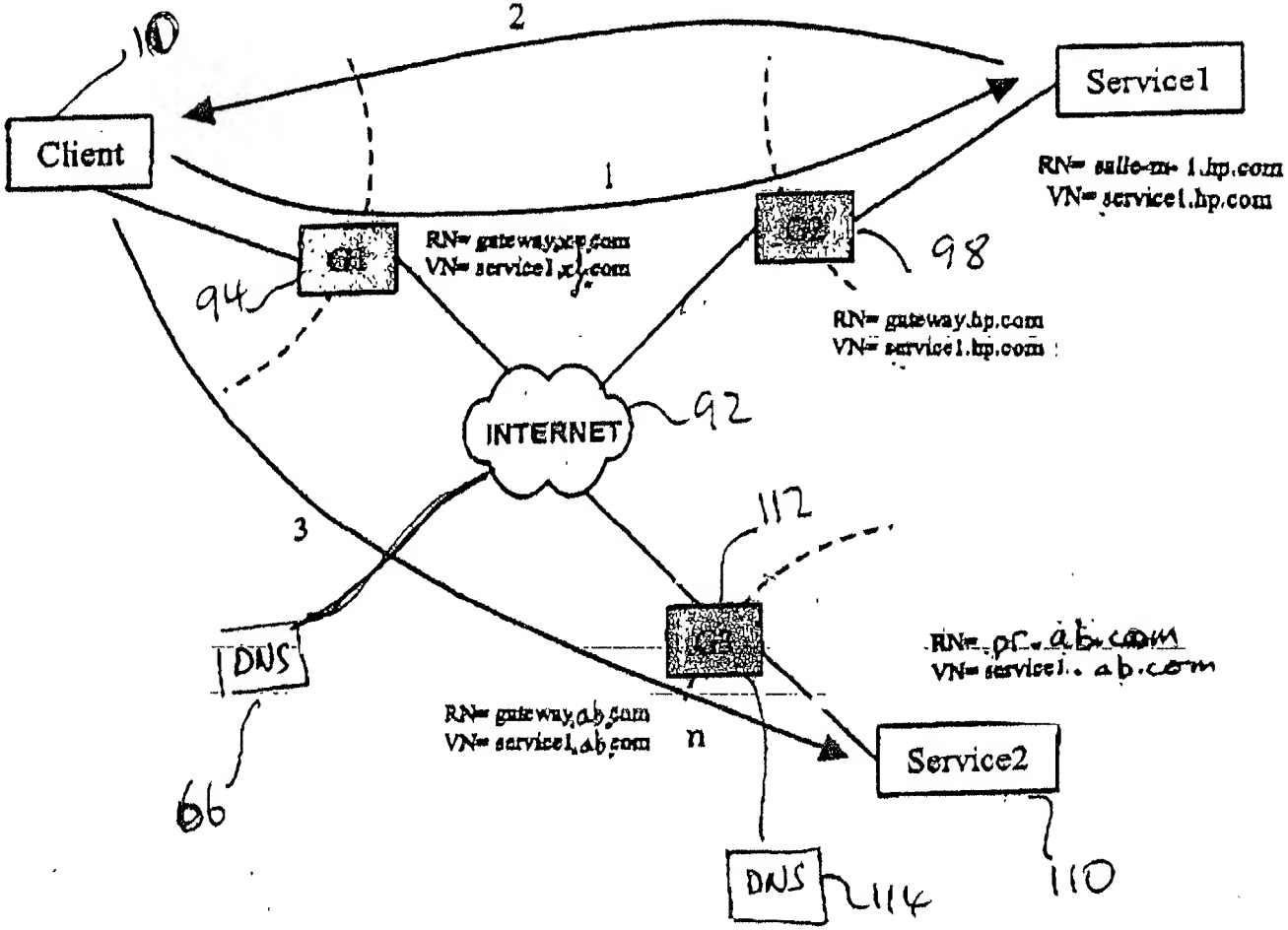
10
2
Service1
Client
1
RN= salle-m-1.hp.com
VN= service1.hp.com
RN= gateway.xyz.com
VN= service1.xyz.com
94
98
RN= gateway.hp.com
VN= service1.hp.com
INTERNET
92
112
3
DNS
RN= gateway.ab.com
VN= service1.ab.com
n
RN= pc.ab.com
VN= service1.ab.com
66
Service2
DNS
114
110

Fig 11

11/01

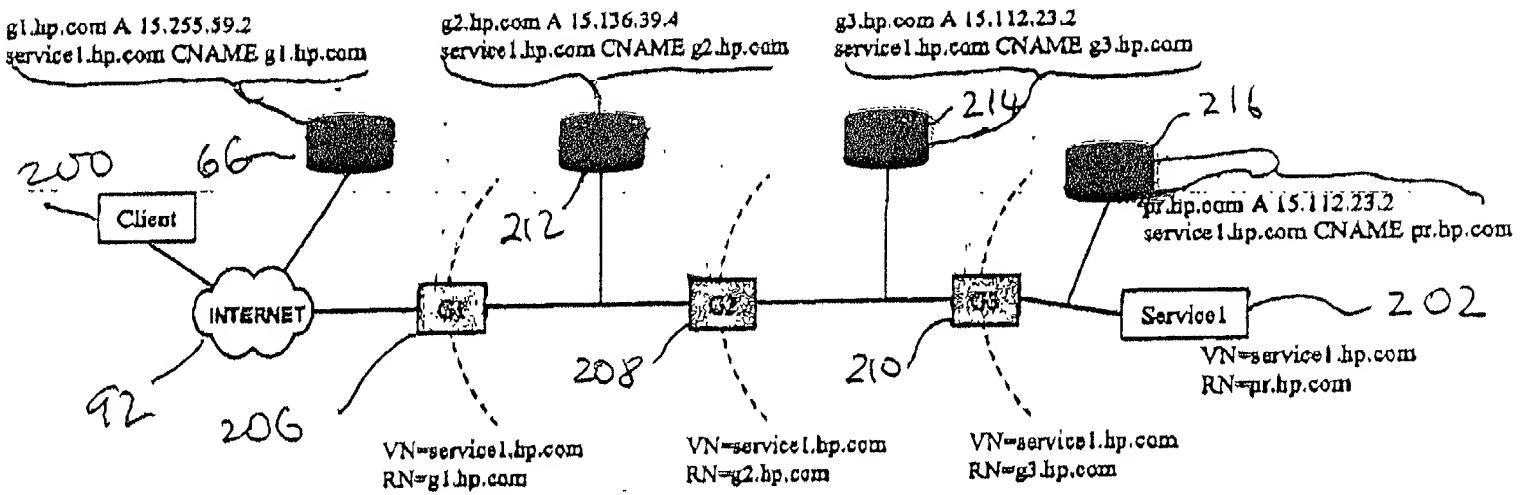
g1.hp.com A 15.255.59.2
service1.hp.com CNAME g1.hp.com
g2.hp.com A 15.136.39.4
service1.hp.com CNAME g2.hp.com
g3.hp.com A 15.112.23.2
service1.hp.com CNAME g3.hp.com
214
216
200
66
Client
212
pr.hp.com A 15.112.23.2
service1.hp.com CNAME pr.hp.com
INTERNET
G1
G2
G3
Service1
202
92
206
208
210
VN=service1.hp.com
RN=pr.hp.com
VN=service1.hp.com
RN=g1.hp.com
VN=service1.hp.com
RN=g2.hp.com
VN=service1.hp.com
RN=g3.hp.com

Fig 12